

1 Claims

What I claim and desire to protect by Letters Patent is

- 1) A method of making a stamp for microcontact printing, comprising:
 injection molding an elastomer reactive mix into a mold;
5 substantially curing and crosslinking said elastomer reactive mix in said mold at substantially
 the end use temperature of a stamp to be formed from said elastomer reactive mix;
 followed by a subsequent cure of said elastomer reactive mix at a temperature higher than
 said substantial end use temperature sufficient to harden said elastomer reactive mix to a
9 desired elastic modulus.
- 2) The method of making a stamp for microcontact printing defined in claim 1 wherein said
 elastomer reactive material is a siloxane
- 3) The method of making a stamp for microcontact printing defined in claim 2 wherein said
13 said siloxane is cured to fix its geometry while at or near the intended final use
 temperature, followed by a higher temperature step to harden said siloxane, without
 substantially inducing geometry changes to said stamp and pattern.
- 4) The method of making a stamp for microcontact printing defined in claim 2 wherein said
17 siloxane elastomer mix is a vinyl addition- type siloxane two component mixture.
- 5) The method of making a stamp for microcontact printing defined in claim 2 wherein
 said siloxane is room temperature curable.
- 6) The method of making a stamp for microcontact printing defined in claim 1 wherein said

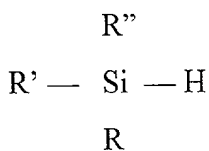
1 elastomer reactive material is selected from the group consisting of siloxane systems,
epoxy systems, acrylate systems, polyurethane systems, polyphosphazine systems, styrene
copolymers.

7) A method of manufacturing a flat panel display where TFT and wiring dimensions
5 contained therein are microscopically small and registration of subsequent layers of such
display is within microns over many inches, using the method defined in claim 1.

8) A method of manufacturing a microelectronic pattern using the method defined in claim 1.

9) The method of making a stamp for microcontact printing as defined in claim 6 wherein said
siloxane system contains moieties selected from the group consisting of
hexamethylcyclotrisiloxane, octamethylcyclotrisiloxane, decamethylcyclotrisiloxane,
octaphenylcyclotetrasiloxane, diphenylsilanediol, trimethyltriphenylcyclotrisiloxane,
vinylmethylcyclotrisiloxanes, trifluoropropylmethylcyclotrisiloxanes, methylhydrocyclotrisiloxane,
hexamethyldisiloxane, divinyltetramethyldisiloxane, tetramethyldisiloxane.

10) The method of making a stamp for microcontact printing as defined in claim 6 wherein said
siloxane system comprises polydimethyl siloxane oligomers with silyl vinyl groups
17 (- Si - C = CH₂) and polydimethyl siloxane oligomers with silicon hydride groups having
the formula:



21 wherein R, R', R'' are methyl and phenyl, vinyl and hydrogen, which will react with the vinyl
groups in the presence of a catalyst to cross-link into a rubber material.